

Gammaherpesvirus infection modulates the temporal and spatial expression of SCGB1A1(CCSP) and BPIFA1 (SPLUNC1) in the respiratory tract

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Figure E1

Wood mouse	1	MKVAITITIAVAMLSICCCSSASSD	ICPGFLQVLEALFMGSESNYEASLKPFNPSSDLQNSRT
House mouse	1	MKIAITITIVVMSICCCSSASSD	ICPGFLQVLEALLMESESGYVASLKPFNPSSDLQNAGT
Rat	1	MKIAITITIVIMLSICCCSSASSD	ICPGFLQVLEALLLGSESNYEAAALKPFNPASDLQNAGT
Hamster	1	MKIAITMAVVMSVCCSSASSD	TCPGFFQVLEFLFMGSESSYEAAALKFYNPSSDLQDSGT
Volcano mouse	1	MKLAITITILVMSVVCYS---	SDTCPGFLQVLEYLFMGSESTYEAAALKFYNPSSDLQNSGM
Rabbit	1	MKLAITITIALVTLALILCSPASAG	ICPRFAHVIENLLIGTPSSYETSLKEFEPDDTMKDAGM
Hare	1	MKLTITITIALVTLALILCSPASAG	ICPGFAHVIENLLIGTPSSYETSLKEFQPDAMKDAGM
Guineapig	1	MKLSATVALIMLACTCSSGSEET	CPSEFHQVLHNFVLGTLSSYQSMVEPFKPDADMQEAGT
Squirrel	1	MKLIIVTFTLVLLAVCCSSASAET	CPEEFHIMETLFMGTLSSYESSVEPFNPDPDMKEAGI
Cow	1	MKLTITITIVLVTLTIFCRPASTE	VCPSLLYVLGNLIAGTPSSFEATLEPFSPDEDMKEATS
Shrew	1	MKLAITEFVVMLALCCGSATAQIC	PDFLEVLRTLFEGPTSGYEAAISVENPTEEMRSSAV
Human	1	MKLAVTITITLVTLALCCSSASA	ETCPSFQRVITETLLMDTPSSYEAAAMELFPDQDMREAGA
Consensus	1	MK.ait..lv.L.lccssas..iCP.f..vle.ll..g.Ssyeasl..f.P..d.q.ag	
Wood mouse	61	QLKKLVDTLPQETRTN	IKKLTEKILTSPLCKQDLRV 96
House mouse	61	QLKRLVDTLPQETRIN	IMKLTEKILTSPLCKQDLRF 96
Rat	61	QLKRLVDTLPQETRIN	IVKLTEKILTSPLCEQDLRV 96
Hamster	61	QLKKLVDTLPQKTRM	NIMKLSEIILTSPLCNQDLSV 96
Volcano mouse	58	QLKKLVDTLPQKTRV	NIVKLSEIILTSNLCNQDPSF 93
Rabbit	61	QMKKVLDLSPQTTRE	NIMKLTEKIVKSPLCM----- 91
Hare	61	QMKKVLDLSPQTTRE	NIKLTEKIVKSPLCM----- 91
Guineapig	61	VMKNLVDSLSPQSTRE	KVILSEKIVTTIKVCA----- 91
Squirrel	61	QMKKLIDTLFVGIKM	NVLKLSDKILKSPRCAG---- 92
Cow	61	QLKTLVDTLSPKAKD	SMLELLMKIIQSPECA----- 91
Shrew	61	TLKNLLNVIPPEIK	EGAALKTKIIQSPOCA----- 91
Human	61	QLKKLVDTLPQKPRE	SIILKIMEKIAQSSSLCN----- 91
Consensus	61	qlKklvdtlpq.tr.n.iKlL.ekI..splC.....	

Alignment of SCGB1A1 amino-acid sequences

The amino-acid sequences of SCGB1A1 from a number of mammalian species were compared using BLAST ¹ and ClustalW 2.0 ² and the Clustal output was represented diagrammatically using and Boxshade 3.21 (www.ch.EMBNet.org). Rodent sequences are on the top 5 lines and other species below with a consensus sequence last. Black text on light grey represents residues conserved in rodents, white text on dark grey represents residues conserved between species and white text on mid-grey represents residues that are semi-conserved. The SCGB1A1 sequences used for analysis are conceptual translations from the mRNA sequences held in Genbank as follows: Wood mouse (*Apodemus sylvaticus*) HM008619.1, House mouse (*Mus musculus*) NM_011681.2, Rat (*Rattus norvegicus*) BC069174.1, Hamster (*Mesocricetus auratus*) L37041.1, Volcano mouse (*Neotomodon alstoni*) AJ583234.1, Rabbit (*Oryctolagus cuniculus*) NM_001082237.1, Hare (*Lepus capensis*) M25609.1, Guinea Pig (*Cavia porcellus*) XM_003467858.1, Cow (*Bos Taurus*) NM_001076976.2, Human (*Homo sapiens*) NM_003357.3. The sequences of the following were from gene prediction on Ensembl: Squirrel (*Sciurus vulgaris*) ENSSTOG00000010085, Shrew (*Sorex araneus*) ENSSARG00000009790.

Figure E2

Wood mouse	1	MFLVGSLLVLCGLLAQSTAQLAGLPLPLGQGLPLTLTDQGLPLPLNQGLPLPLGQGLPLAV
House mouse	1	MFLVGSLLVLCGLLAHSTAQLAGLPLPLGQGPPLPLNQGPPLPLNQGLPLPLAQGLPLAV
Rat	1	MFLVGSLLVLCGLLAQSTAQLAGLPLPLGQ-----GLPLPLGQGLPLPLGQGLPLAV
Hamster	1	MFLVGSLLVLCGLLAQSSAQLAGLPLPLGQ-----GLSLPIDQSLPLPIDQGLPLPV
Chinchilla	1	MFQIGGLIVLCGLLAQSTAQGLPLPLGQ-----VVPLPIDQGLPLSV
Kangaroo rat	1	---IGSLTIFCGLLAQSTAQGLPLPLGQ-----GLPLPG
Rabbit	1	MSRFGGLTAFWGLLAHTVVRLEGLPLPLEQ-----ALPLPV
Cow	1	MFHIGSLVLCGLLAFTTALLEALPTPLGQ-----TLPLAV
Human	1	MFQTGGLIVFYGLLAQTMQFGGLPVPLDQ-----TLPLNV
Consensus		Mf..G.L...cGLLA...aql.gLPPLgQ.....LPL.v
Wood mouse	60	SPALPSNPTDILLACKFTDALSGGLLSGGLLGILENIPLLDVLKSGGGNSNGLVGGLLGKL
House mouse	61	SPALPSNPTDILLACKFTDALSGGLLSGGLLGILENIPLLDVIKSGGGNSNGLVGGLLGKL
Rat	53	SPALPSNPTDILLACNFANALSGGLLSGGLLGILENIPLLDVIKSGGGSSNGLVGGLLGKL
Hamster	53	TPGLLSNPTDHLAGSFTDALSGGLLSGGLLGILENIPLLDILKSGGGNTNGLVGGLLGKL
Chinchilla	45	TPAVPLKPKDP-AGSLNGALTNGLLSGGLLGILENPLLNILKPGGGTSGGLTGGLLGTL
Kangaroo rat	34	APALPSNPTNLVA-NFKSGLSNGLLSGGLLDILGNLPLLDILKSGDGNSSGGLTGGLLGKL
Rabbit	37	SPALPIDPTNLG-SLTNALSSGLLTCDLGCTLENLPLLDILKTG-CASGGLIGNLLGTL
Cow	37	TPALAPSPEDLAG-SLTGALSNGLLSEGLLGILENPLLDILKTRGNAPSGLIGSLGKL
Human	37	NPALPLSPTGLAG-SLTNALSNGLLSGGLLGILENPLLDILKPGGGTSGGLTGGLLGKL
Consensus		.Palp..Pt.....gLS.GLLsggllgileN.PLLd.lK.ggg.s.GL.GgLLG.L
Wood mouse	117	TSSIPLLNNIILDIKITDPQLELGLVQSPDGHRYVVTIPLGLKIKVNMPPVVG-SLLELAV
House mouse	118	TSSVPLLNNIILDIKITDPQLELGLVQSPDGHRLYVTIPLGLTLNVNMPPVVG-SLLQLAV
Rat	110	TSSVPLLNNIILDIKITDPRLLELGLVQSPDGHRLYATIPLSLKLQVNMPPVVG-SFLQLAV
Hamster	110	TSSIPLLNNIILDIKITDPQLELGLVQSPDGHRLYVTIPLGLTLKVNTPLVG-SLLKLAV
Chinchilla	101	TSGIPLLNNIILDIRITNPQLELGLVQSPDGHRLYVTIPLGLNLELKLPMIT-SLLELNL
Kangaroo rat	90	TSSIPLLNSIIDIEITDPQLELGLVQSPKGHRLYVTIPLGLRLVNTPLTVG-SVLELDV
Rabbit	92	TSLIPGLNNIILDIKITNPRLELGLVQSPAGHRLYVTIPLGLILRVNTPLVG-NLRLAV
Cow	93	TSLTPLLNNIIEIKITNPQLELGLVQSPDGHRLYVTIPLGMILNVNTSLVG-SLLRLAV
Human	93	TSVIPGLNNIILDIKITNPQLELGLVQSPDGHRLYVTIPLGIKLQVNTPLVGASLLRLAV
Consensus		TS..PlLNNI.di.iT.PqLLELGLVqSP.GHRLYvTIPLgl.L.vn.p.vg.slL.Lav
Wood mouse	172	KLNITAEVLAVKDNQGRITHLVLGDCTHSPGSLNITLLNGVT--PVQNFLDNLTGILNKVL
House mouse	173	KLNITAEVLAVKDNQGRITHLVLGDCTHSPGSLKISLLNGVT--PVQSFVDNLTGILTQVL
Rat	165	KLNITAEIVAMKDNQGRITHLVLGDCTHSPGSLQITLLNGVT--PVQSSLDSTGILTQVL
Hamster	165	KMNITAEVLAVKDNQGRITHLVLGDCTHSPGSLQISLLNGVT--PLQSVFDSLTGILTQVL
Chinchilla	156	RLNVITAEVLAVRDNQGRVHLVLGDCTHSPGSLHISLLKGVAPLPVQGLLDGITDILNKVL
Kangaroo rat	146	KLNITVEILAVRDNQGVHLVLGDCTHSPGSLHITLQNGVAPLPVQGLLDALTGVINEVI
Rabbit	148	QLNITAEILVAKDSQGRSHLVIGDCTHPPGSLIEISLLNGMAPLPVQSFNNLTGILTRVL
Cow	149	KLNITVEILAVTDEQKHVHLVVGNCTHSPGSLQIFLLDGLGSLPIQSFVDNLTGILNDVL
Human	150	KLDITAEILAVRDKQERITHLVLGDCTHSPGSLQISLLDGLGSLPIQGLLDSTGILNKVL
Consensus		klniTaE.lv..D.Qgr.HLVlGdCTHsPGSL.I.Ll.G....P.Q...d.lTgiL..Vl
Wood mouse	236	PELIQGVKVCPLVNGILSGLDVTLVHDIAELLIHGLQFVIKV 277
House mouse	237	PELIQGVKVCPLVNGILSGLDVTLVHNIAELLIHGLQFVIKV 278
Rat	229	PELIQGVKVCPLINGILSGLDVTLVHNIAELLIHGLQFVIKV 270
Hamster	229	PDLVQGVKVCPLVNGILSHLDVTLVHDIAELLIHGLQFVIKV 270
Chinchilla	222	PELVQGVKVCPLVNEVLSHLDVTLVHDIAELLIHGVQFVIKV 263
Kangaroo rat	211	PELVQGVKVCPLVNEVLSHLDVTLVHDIAEALLGQQEFVIKV 252
Rabbit	213	PGLIQGVKVCPLVNGVLSHLDVSLVHDIAHMLINKLEFVAQL 254
Cow	214	PGLVQGVKVCPLVNAVLSRLDVTLVHSIVNALIHGLQFVIKV 255
Human	215	PELVKGNVCPLVNEVLRLGLDITLVHDIIVNMILIHGLQFVIKV 256
Consensus		P.L.qg.VCPLvN..Ls.LDvtLVH.Iv..Lihg.qFVIkv

Figure E2: Alignment of BPIFA1 amino-acid sequences

The amino-acid sequence of BPIFA1 from wood mouse was compared with equivalent sequences from a number of mammalian species using BLAST, ¹ and ClustalW2.0 ² and the Clustal output was represented diagrammatically using Boxshade3.21 (www.ch.EMBLnet.org). White text on dark grey represents residues conserved between species and white text on mid-grey represents residues that are semi-conserved. The BPIFA1 sequences used for analysis are conceptual translations from the mRNA sequences held in Genbank as follows: Wood mouse (*Apodemus sylvaticus*) HM008620, House mouse (*Mus musculus*) NM_011126.3, Rat (*Rattus norvegicus*) NM_172031.1, Hamster (*Cricetulus griseus*) XM_003512019.1, Chinchilla (*Chinchilla lanigera*) FJ830605.1, Cow (*Bos Taurus*) BC114803.1, Human (*Homo sapiens*) NM_016583.3. The Kangaroo rat (*Dipodomys ordii*) sequence was from an *Ensembl gene prediction* ENSDORP000000002137

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